

1 YEAR
WARRANTY

MADE IN
USA



User's Guide



FPUSV4000



FPU4500

Shop online at

omega.com[®]

Ω OMEGA[®]

omega.com

e-mail: info@omega.com

*For latest product manuals:
omegamanual.info*

ISO 9001
CERTIFIED
CORPORATE QUALITY
STAMFORD, CT

ISO 9002
CERTIFIED
CORPORATE QUALITY
MANCHESTER, UK

FPUSV4000 VARIABLE SPEED PUMP AND FPU4500 FIXED SPEED PUMP



OMEGAnet® Online Service omega.com	Internet e-mail info@omega.com
---	---

Servicing North America:

U.S.A.: One Omega Drive, Box 4047
ISO 9001 Certified Stamford, CT 06907-0047
Tel: (203) 359-1660 FAX: (203) 359-7700
e-mail: info@omega.com

Canada: 976 Bergar
Laval (Quebec) H7L 5A1, Canada
Tel: (514) 856-6928 FAX: (514) 856-6886
e-mail: info@omega.ca

For immediate technical or application assistance:

U.S.A. and Canada: Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA®
Customer Service: 1-800-622-2378 / 1-800-622-BEST®
Engineering Service: 1-800-872-9436 / 1-800-USA-WHEN®

Mexico: En Español: (001) 203-359-7803 e-mail: espanol@omega.com
FAX: (001) 203-359-7807 info@omega.com.mx

Servicing Europe:

Benelux: Postbus 8034, 1180 LA Amstelveen, The Netherlands
Tel: +31 (0)20 3472121 FAX: +31 (0)20 6434643
Toll Free in Benelux: 0800 0993344
e-mail: sales@omegaeng.nl

Czech Republic: Frystatska 184, 733 01 Karviná, Czech Republic
Tel: +420 (0)59 6311899 FAX: +420 (0)59 6311114
Toll Free: 0800-1-66342 e-mail: info@omegashop.cz

France: 11, rue Jacques Cartier, 78280 Guyancourt, France
Tel: +33 (0)1 61 37 2900 FAX: +33 (0)1 30 57 5427
Toll Free in France: 0800 466 342
e-mail: sales@omega.fr

Germany/Austria: Daimlerstrasse 26, D-75392 Deckenpfronn, Germany
Tel: +49 (0)7056 9398-0 FAX: +49 (0)7056 9398-29
Toll Free in Germany: 0800 639 7678
e-mail: info@omega.de

United Kingdom: One Omega Drive, River Bend Technology Centre
ISO 9002 Certified Northbank, Irlam, Manchester
M44 5BD United Kingdom
Tel: +44 (0)161 777 6611 FAX: +44 (0)161 777 6622
Toll Free in United Kingdom: 0800-488-488
e-mail: sales@omega.co.uk

It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification. The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.
WARNING: These products are not designed for use in, and should not be used for, human applications.



Thank you for purchasing an OMEGAFLEX® FPUSV4000 or FPU4500 pump. We are sure you will be completely satisfied with its performance. Should you need assistance or have any questions regarding its use or installation please call our Customer Service Department at

1-800-622-2378 or 203-359-1660. On the web you can find us at:

omega.com

e-mail: cservice@omega.com

Table of Contents

Section	Page
General Description	1
Features	1
Installation Instructions	1
Tubing Installation/Pump Head Assembly	2
FPUSV4000 Fuse Installation	3
FPUSV4000 Motor Brush Replacement	3
Replacement Parts List.....	4



OMEGA Engineering Inc. assumes no responsibility or liability for chemical compatibility of our tubing in specific applications. ALWAYS pretest tubing in accordance with tubing manufacturer's specifications. Tubing that shows signs of swelling, embrittlement or other deterioration should not be used.

GENERAL DESCRIPTION

The OMEGAFLEX® FPUSV4000 variable speed drives are powered by a DC gearmotor. A specially designed electronic speed control system converts AC to DC while providing smooth accelerated control over the entire flow range. The three position on/ off switch allows the user to maintain speed setting when unit is turned off or reversed. The FPU4500 are fixed speed AC units.

FEATURES

- *1. Electrical: I 15 VAC, 60HZ
- 2. Reversible Variable Speed Control for Variable Flowrates.
- 3. Maximum and Minimum Speed Control Adjustment.
- *4. Factory Preset Flowrate: 2000 ml/min.
- 5. Replaceable Motor Brushes. (Replacement instructions page 5.)
- 6. External Fuse Holder. (Fuse replacement instructions page 5.)

INSTALLATION INSTRUCTIONS

1. **POWER REQUIREMENTS:** Voltage and frequency of power supply must be the same as shown on unit.
2. **WIRING CONNECTIONS:** All wiring and electrical connections must comply with local and national electrical codes.
3. **MOUNTING:** FPU4500 Case enclosed model may be placed on any flat surface assuring space is provided at the back of the case for air circulation through ventilation holes. FPU4500 Bracket or Case mount assuring space provided for air flow. Do not allow tubing to be crimped.
4. **MOUNTING LOCATION:** Pump should be placed in a dry location with adequate cooling provided. The ambient temperature should not exceed 35°C.

**WARNING**

This unit should not be used in outdoor or hazardous locations

**CAUTION**

Motor life will be drastically reduced if left in the stalled position for extended periods.



TUBING INSTALLATION/PUMP HEAD ASSEMBLY

Inspect all tubing regularly and replace if any sign of deterioration occurs. Always wear safety glasses and protective clothing when working with chemicals. (See Illustrations on page 5)

1. Disconnect power to the pump.
2. Disconnect the suction and discharge tubing from the pump tubing. (if the product pumped is not caustic, tubing may be removed by running pump and pulling on the discharge tube until tubing is removed. In this case skip steps 4-5)
3. Remove (2) screws (E) to release pump head assembly.
4. Remove tube housing (D) by gently rocking side to side while pulling off. (in most cases roller bracket should stay on shaft. In the event that it is removed with the housing, line up flat on shaft with flat on inside of bracket and push back into place. There is also a tubing cover ring (A) that should be on up against the motor case. This is free floating until the tube housing is replaced.)
5. Remove tubing from roller bracket.
6. Clean roller race inside of tube housing, removing any particles that could damage tubing. Be sure all cleaning solvents are removed prior to installing new tube.
7. To reassemble, rotate roller bracket assembly so that the rollers are in the 10:00, 2:00 and 6:00 positions (See Illustration I -I). Lay the tube over the top rollers and hold the ends together at the 6:00 position. Put the tube housing (with tube inlet and outlet restraints down) over the roller assembly and the tube, locating the ends of the tubing into the tube inlet and outlet restraints.
8. Press tube housing onto shaft while gently pulling down to align shaft into tube housing bearing. Press tube housing flush to motor case and replace screws.

CAUTION

Be sure not to twist or leave the tubing pinched while installing, as this will affect your flow and tubing life.

FOR 4000 CASE MODELS ONLY FUSE INSTALLATION

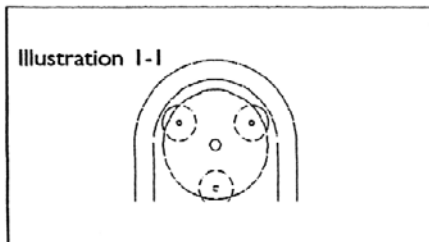
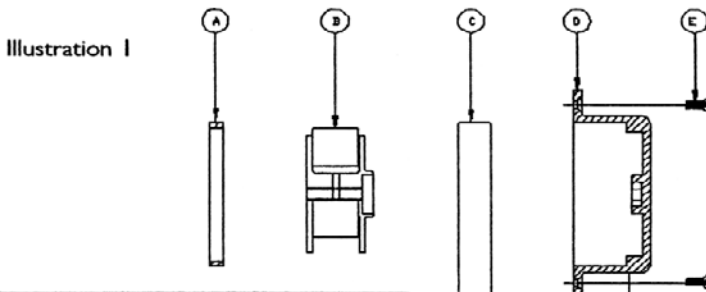
(See page 5 for fuse ordering information.)

1. Disconnect power to pump.
2. The fuse holder is located on the back of the case.
3. Turn knob counterclockwise.
4. Slide the fuse out
5. Remove old fuse and replace with new fuse.
6. Slide back in and push while turning clockwise to lock.

MOTOR BRUSH REPLACEMENT

(See page 5 for brush ordering information.)

1. Disconnect power to pump.
2. Remove case cover by removing 6 screws
3. With a small flat head screw driver remove the brush caps on both sides of the DC motor
4. Remove old brush and replace with new brush. (Slide in horizontally)
5. Push metal plate on the end of the brush inside and hold it while replacing brush cap.
6. Replace case cover.





REPLACEMENT PARTS

Call Customer Service Department at **1-800-622-2378** or **203-359-1660** to order. Please remember to include the complete model number when you place your order for replacement parts.

- Tube TU-1225-3856-01
- Pump Kit 400-205-000-13

(Includes:Tube Housing w/bearing, cover ring roller bracket assembly and two screws)

- For Case Models Only:
- Motor Brushes (2/pack) BR- 1140-01 -00
 - Fuse 5/pack FU- 1127-03-00



FPUSV4000 VARIABLE SPEED PUMP AND FPU4500 FIXED SPEED PUMP

NOTES:



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

OMEGA is a registered trademark of OMEGA ENGINEERING, INC.

© Copyright 2005 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.

Where Do I Find Everything I Need for Process Measurement and Control? **OMEGA...Of Course!** *Shop online at omega.com*

TEMPERATURE

- ☑ Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- ☑ Wire: Thermocouple, RTD & Thermistor
- ☑ Calibrators & Ice Point References
- ☑ Recorders, Controllers & Process Monitors
- ☑ Infrared Pyrometers

PRESSURE, STRAIN AND FORCE

- ☑ Transducers & Strain Gages
- ☑ Load Cells & Pressure Gages
- ☑ Displacement Transducers
- ☑ Instrumentation & Accessories

FLOW/LEVEL

- ☑ Rotameters, Gas Mass Flowmeters & Flow Computers
- ☑ Air Velocity Indicators
- ☑ Turbine/Paddlewheel Systems
- ☑ Totalizers & Batch Controllers

pH/CONDUCTIVITY

- ☑ pH Electrodes, Testers & Accessories
- ☑ Benchtop/Laboratory Meters
- ☑ Controllers, Calibrators, Simulators & Pumps
- ☑ Industrial pH & Conductivity Equipment

DATA ACQUISITION

- ☑ Data Acquisition & Engineering Software
- ☑ Communications-Based Acquisition Systems
- ☑ Plug-in Cards for Apple, IBM & Compatibles
- ☑ Datalogging Systems
- ☑ Recorders, Printers & Plotters

HEATERS

- ☑ Heating Cable
- ☑ Cartridge & Strip Heaters
- ☑ Immersion & Band Heaters
- ☑ Flexible Heaters
- ☑ Laboratory Heaters

ENVIRONMENTAL MONITORING AND CONTROL

- ☑ Metering & Control Instrumentation
- ☑ Refractometers
- ☑ Pumps & Tubing
- ☑ Air, Soil & Water Monitors
- ☑ Industrial Water & Wastewater Treatment
- ☑ pH, Conductivity & Dissolved Oxygen Instruments